

## Empowerment of Marginalized Community Groups Through Training on Making Liquid Detergent and Dishwashing Soap at PKBM Media Adaptive Bandar Lampung

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Abstract	Article Info
<p>Community-based entrepreneurship development plays a crucial role in strengthening local economic resilience, particularly among communities with limited access to formal employment opportunities. This community service program was implemented at the Adaptive Media Community Service Center (PKBM) in Bandar Lampung, Indonesia, with the objective of enhancing entrepreneurial knowledge and practical skills through an introduction to home-based laundry businesses and hands-on training in the production of liquid detergent and dishwashing soap. The program adopted a participatory training approach consisting of four stages: socialization, structured material delivery, direct practical exercises, and post-training evaluation. The results indicate a substantial improvement in participants' competencies. Approximately 80% of participants demonstrated a good level of understanding of the operational and entrepreneurial aspects of managing a home laundry business, while 70% successfully acquired practical skills in producing liquid detergent and dish soap using simple, low-cost, and environmentally friendly materials. Moreover, participants showed strong enthusiasm and motivation to apply these skills as viable household-based business opportunities, indicating a positive shift in entrepreneurial intention. This activity contributed not only to skill enhancement but also to the empowerment of the local community by fostering self-reliance and income-generating potential. The program demonstrates that simple, practice-oriented training can effectively bridge knowledge and skill gaps in community entrepreneurship development. The main contribution of this study lies in presenting a replicable community empowerment model that integrates entrepreneurship education with environmentally conscious production skills, offering practical insights for policymakers, educators, and community development practitioners seeking sustainable local economic development strategies. This model has strong potential for adaptation and implementation in other regions with similar socio-economic conditions.</p>	<p><b>Article History</b>            Received :            August 10, 2025            Revised :            November 06, 2025            Accepted :            December 18, 2025</p> <p><b>Keywords:</b>            Laundry Business, Liquid Detergent, Dish Washing</p>

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### INTRODUCTION

The Media Adaptive Community Learning Center (PKBM) is a non-formal institution that provides Package A, B, and C equivalency education. This PKBM was initially established to accommodate people with disabilities to obtain proper education, but over time it has also accepted non-disabled students from various backgrounds, such as those who dropped out of school due to economic constraints, those who chose to work from a young age, children from orphanages, street children, and housewives.

Based on Basic Education Data/DAPODIK, PKBM Media Adaptive is the only PKBM in Lampung Province that, in addition to providing Package A, B, and C equivalency programs, also

serves students with disabilities, including the blind, physically disabled, moderately physically disabled, and mentally disabled. The diversity of the students' backgrounds makes PKBM Media Adaptive semi-inclusive and a marginalized community group, making this group a target for community empowerment that must be followed up. Based on initial observations, the majority of students do not yet have productive skills that can be developed into independent businesses. This condition prompted the implementation of community service activities in the form of training in making dishwashing soap as a form of social and economic intervention.

The main objective of this activity is to empower the PKBM Media Adaptive community by increasing their knowledge about the home laundry business and their skills in making liquid detergent and dishwashing soap as a first step in starting a home laundry business as a manifestation of the participants' entrepreneurial spirit. According to data from the Kementerian Koperasi dan UKM (2021), household-scale businesses such as making dish soap have great potential for growth, especially if supported by appropriate training and marketing.

Detergent is one of the cleaning agents commonly used by the community, including households, industries, hotels, restaurants, and others. Based on its form, detergents available on the market can be liquid detergent, cream detergent, and powder detergent. In general, these three types of detergents have the same function. The difference between them is their form. Initially, liquid detergent was more commonly used in cleaning kitchen utensils. However, with the development of the times, liquid detergent is also widely used for industrial needs and laundry detergent. This is because liquid detergent is easier to handle and more practical to use (Kiswandono *et al.*, 2020). Dishwashing soap is a basic household necessity that is used every day. However, the increasing price of commercial products has become an economic burden for low-income families (Fitriani & Wulandari, 2021). On the other hand, the community has the potential to produce soap independently with easily obtainable materials and simple techniques (Hayati *et al.*, 2024).

This training was chosen because it is practical, easy to implement, and has high economic potential. A study by Yuliana *et al.* (2025) shows that dishwashing soap training can increase community economic independence and environmental awareness. In addition, this activity is in line with a community-based service approach that places the community as active subjects (Dermawan *et al.*, 2023). It is hoped that after the training, participants will have the ability to produce soap independently, reduce household expenses, and open up opportunities for small home-based businesses.

## **METHOD**

This program will be implemented in September 2025. The location of the community service program is at PKBM Media Adaptive. The process of implementing Community Partnership Empowerment consists of several steps, including (1) Socialization; (2) Home Laundry Business Training [3] Training in the Production of Liquid Detergent and Dishwashing Soap; (4) Technology Application; (5) Mentoring and Evaluation; (6) Program Sustainability.

The production of liquid detergent and dish soap using tools includes: buckets (20 L and 10 L), plastic measuring cups, rubber gloves, wooden stirrers, plastic funnels, bottles and containers, and packaging stickers. The materials used include: clean water, 500 grams of SLES (Sodium Lauryl Ether Sulfate), 500 grams of MES (Methyl Ester Sulfonate), 500 grams of Surfactant I, 500 grams of Surfactant II, and 500 grams of fine salt.

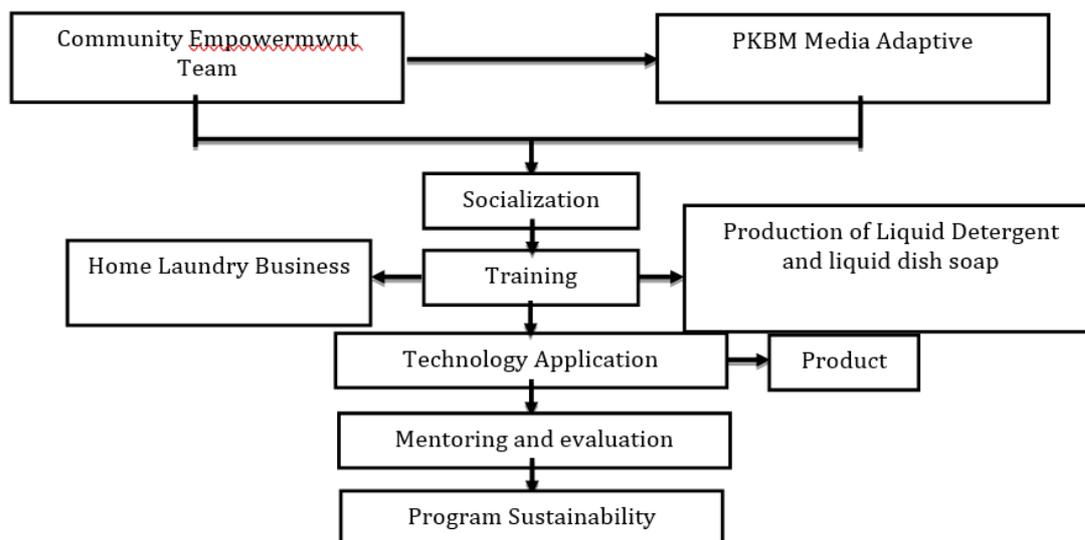


Figure 1. Stage of Activity Method

The raw materials for detergent are SLES and MES which are known to have stronger cleaning power than bath soap, and the advantage of detergent is that it has hydrophilic and lipophilic groups, where the hydrophilic group will bind water and the lipophilic will bind fat because the strong attraction between the hydrophilic and lipophilic causes dirt or fat to come off the clothes. (Cahyana, A.S dan Sulistiyowati, W., 2020). Fine salt is used as a viscosity regulator for soap, which must be added gradually until the desired soap consistency is achieved (Xie, Juni., 2023). The steps for making liquid detergent are as follows: prepare 10 L of warm or hot water, add 500 g of SLES and 500 g of MES little by little until completely dissolved (bucket A), then prepare 8 L of clean water and add 500 g of fine salt, then stir (bucket B). Add the laundry surfactant to bucket A and stir until completely dissolved (add little by little), then gradually add the salt solution from bucket B to bucket A until the consistency is sufficient. The steps for making dishwashing soap are to prepare 5 L of warm or hot water, then add 500 g of SLES and 500 g of surfactant little by little (bucket A). Prepare 500 mL of clean water, then add fine salt (if you want to make 10 L, add 200-250 g of salt; if you want to make 15 L, you need 300-350 g of salt) as bucket B. Gradually add surfactant II to bucket A and stir until completely dissolved. Gradually add the salt solution from bucket B to bucket A and adjust until the consistency is sufficient. The technology of basic chemical materials applied in the training on making liquid detergent and dishwashing soap is presented in Figure 2 below.



Figure 2. The technology of basic chemical materials applied in the training on making liquid detergent and dishwashing soap

## RESULTAND DISCUSSION

The results of the activities carried out by the empowerment team in providing training to PKBM Media Adaptive partners include the following stages: the socialization stage, in which the community service team conducted socialization at the partner's location to explain the technical aspects of the activities and agree on the timing of the activities, the activity materials, and the activity assistance. The results of this socialization activity were followed by an online Focus Group Discussion (FGD) between the proposing teams to explain the technical aspects of the activity.



Figure 3. Socialization with PKBM Media Adaptive



Gambar 4. Forum Group Discussion with team

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The next stage is the training stage, in which the community service team first conducts training on home laundry businesses with Ade Citra, SE., Ak., M.Ak, owner of “Pasti Laundry,” which has branches throughout Bandar Lampung City, as the guest speaker. During this training, Ade Citra explained tips for starting a home laundry business for beginners, including market analysis, capital requirements, promotional strategies, and operational and management aspects, as presented in Figure 5. The training continued with the production of liquid detergent and dishwashing soap with Dr. Laila Susanti, S.Si., M.Si, as the speaker. This training was an implementation of the laundry business training, which is expected to be a good combination for beginners in the home laundry business, as presented in Figure 6.



Figure 5. Home Laundry Business Training



Figure 6. Production of Liquid Detergent Training

The next stage is mentoring and evaluation, where partners are given the opportunity to conduct practical tests on the production of liquid detergent and dish soap using tools and materials prepared by the proposing team based on the work procedures that have been explained. The proposing team provides mentoring during the practical tests and conducts evaluations by administering pre-test and post-test questionnaires. The liquid detergent and dishwashing soap that have been made are packaged in 1 L bottles, and the dishwashing soap is packaged in 450 mL containers and labeled with a sticker bearing the PKBM Media Adaptive logo.



Figure 7. Liquid Detergent Making Practice



Figure 8. Liquid Dishwashing Soap Making Making Practice



Figure 9. Liquid Detergent and Dishwashing Soap Product



The results of the home laundry business training showed that participants' ability to understand the training material increased by 70% based on the pre-test and post-test questionnaires presented in Figure 10 below. The results of the training on making liquid detergent and dish soap show a 75% increase in participants' ability to understand and practice making liquid detergent and dish soap based on the pre-test and post-test questionnaires presented in Figure 11 below.

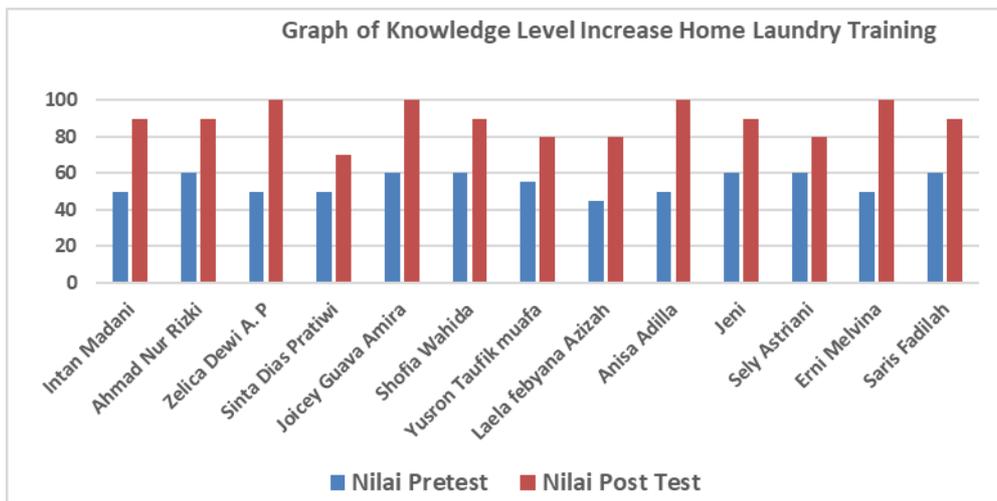


Figure 10. Graph of Knowledge Level Increase Home Laundry Training

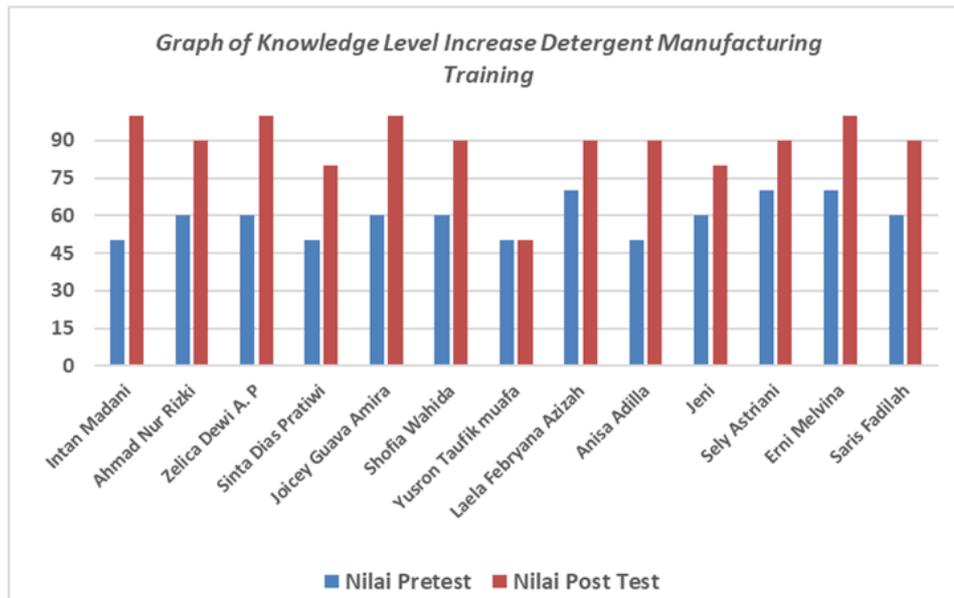


Figure 11. Graph of Knowledge Level Increase Detergent Manufacturing Training

Based on the graph showing the level of knowledge gained from training on laundry and liquid detergent and dish soap production, the results of the pre-test and post-test indicate that the training on liquid detergent and dish soap was successful, as evidenced by an increase in the students' knowledge of liquid detergent and dish soap. Soap-making training activities have also been carried out for the community of Desa Onozalukhu, Kecamatan Lahewa, Kabupaten North Nias, which has opened the local community's insight into making dishwashing soap independently (Lase, A., 2022). Other community service activities also include training in making natural-based detergents from pandan leaves and lime, showing a 100% increase in training effectiveness, and proven to increase the interest of local villagers to make detergent independently in the Kampung Keluarga Berencana Palasah, Sumedang (Widyasanti, A., 2021) and in the community of Kabupaten Kubu Raya (Utami, *et al.*, 2025). Dishwashing soap-making training in Desa Klumpang Kebun and Dusun III Depok Jaya has also been carried out with the aim of empowering non-productive groups, namely productive and independent housewives, in making dishwashing soap and marketing it (Harahap, A. Y. A, *et al.*, 2024).

Based on various reports of community service that have been reported, it can be discussed that the high enthusiasm of local communities in carrying out training in making detergent soap or dishwashing soap, this is due to the fact that detergent soap or dishwashing soap are basic daily needs, so that the implementation of this training can be directly applied by the community.

## CONCLUSION

In general, this community service program has been successful. This series of activities has increased community motivation, awareness, interest, knowledge, and skills in starting a home-based laundry business and making dish soap and liquid detergent. One indicator of the program's success is the enthusiasm and active participation of participants throughout the program. Furthermore, measurable improvements have been observed, including: increased knowledge of entrepreneurial spirit among students by 70% through training in home laundry business. Increased knowledge and skills among students by 75% in making liquid detergent and dish soap as preparation for opening a home laundry business as a manifestation of the implementation of entrepreneurial spirit among students.

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#### **AUTHOR CONTRIBUTION STATEMENT**

Thank you for all the contributions and success of this program. LS as the leader and responsible for the entire program, NEW and A are an executor training in making liquid detergent and dishwashing soap. A and DPL were student members who played a role in assisting the teaching team at all stages of the activity.

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